

Claims

- [c1] What is claimed is:
1. A signal processing circuit of a compact disk drive for adjusting an input signal and generating a corresponding output signal, the signal processing circuit comprising:
 - an attenuator for receiving the input signal and attenuating the input signal to generate a first temporary output signal;
 - an amplifier for receiving the input signal and amplifying the input signal to generate a second temporary output signal;
 - a controller connected to the attenuator and the amplifier for selectively enabling one of the attenuator and the amplifier and disabling the other according to the first temporary output signal and the second temporary output signal; and
 - a waveform adjuster for receiving the first temporary output signal or the second temporary output signal to generate an output signal.
 - [c2] 2. The signal processing circuit of claim 1 wherein the controller is capable of controlling the attenuator to adjust an attenuation magnitude imposed on the input signal.
 - [c3] 3. The signal processing circuit of claim 1 wherein the controller is capable of controlling the amplifier to adjust an amplification magnitude imposed on the input signal.
 - [c4] 4. The signal processing circuit of claim 1 wherein the controller enables/disables the attenuator or the amplifier according to envelopes of the first temporary output signal or the second temporary output signal.
 - [c5] 5. The signal processing circuit of claim 1 wherein the waveform adjuster comprises:
 - a plurality of differential pairs connected to the attenuator and the amplifier for receiving the first temporary output signal of the attenuator and the second temporary output signal of the amplifier; and
 - a plurality of current sources connected to the attenuator and the amplifier for providing the corresponding differential pair with a bias current;

wherein when the controller selects one of the attenuator or the amplifier to generate the first temporary output signal of the attenuator or the second temporary output signal of the amplifier, the current source of the differential pair corresponding to the enabled attenuator or the enabled amplifier is turned on for providing the bias current.

[c6] 6. The signal processing circuit of claim 1 wherein the waveform adjuster is a slicer.

[c7] 7. The signal processing circuit of claim 1 wherein the controller comprises: a plurality of differential pairs connected to the attenuator and the amplifier for receiving the first temporary output signal of the attenuator and the second temporary output signal of the amplifier; and a plurality of current sources connected to the attenuator and the amplifier for providing the corresponding differential pair with a bias current; wherein when the controller selects one of the attenuator or the amplifier to generate the first temporary output signal of the attenuator or the second temporary output signal of the amplifier, the current source of the differential pair corresponding to the enabled attenuator or the enabled amplifier is turned on for providing the bias current.

[c8] 8. A signal processing method of an optical disk drive for adjusting amplitude of an input signal to generate a corresponding output signal, the signal processing method comprising: attenuating the input signal for generating a corresponding first temporary signal; amplifying the input signal for generating a corresponding second temporary signal; and selecting one of the first temporary signal and the second temporary signal for adjusting a corresponding waveform thereof to generate an output signal.

[c9] 9. The signal processing method of claim 8 further comprising adjusting an attenuation magnitude imposed on the input signal according to amplitude of the first temporary signal.

[c10] 10. The signal processing method of claim 8 further comprising
adjusting an amplification magnitude imposed on the input signal according to
amplitude of the second temporary signal.